

NOTES AND NEWS.

DR. G. LAGERHEIM of the Botanical Museum of Tromsø, Norway, has been made professor of botany, and director of the Botanical Institute of the University of Stockholm, Sweden.

MR. GEORGE HALEY writes us that he has discovered *Lycopodium alpinum sabinaefolium* at Chatham, N. H., alt. 3,500^{ft}, and inquires whether any other station has been reported for it in the United States.

MR. GEO. E. DAVENPORT asks us to say that the story¹ of Prof. D. C. Eaton having been led to interest himself in ferns through the young lady who afterward became his wife is untrue, as he learns from Mrs. Eaton herself.

PROF. GEORGE LAWSON of Dalhousie College, Halifax, N. S., died Nov. 10th. He published many papers upon the flora of the maritime provinces, partly printed in the *Proceedings* of the Royal Society of Canada, of which he was president in 1888.

AT A RECENT meeting of the Linnean Society (Nov. 7th) Mr. C. T. Druery exhibited a specimen of *Scolopendrium* bearing antheridia and archegonia upon the fronds, said to "constitute a more advanced phase of apospory than any previously noted."

A WISCONSIN correspondent of *Garden and Forest* (Nov. 27th) gives some details as to the supposed poisoning of horses by *Solidago*. The case is not proved against *Solidago*, but the genus is under suspicion. As to the species suspected there is no intimation.

PROFESSOR E. L. GREENE has determined the dates of issue of Nuttall's *Compositæ*, a matter of considerable importance in matters of priority. He publishes his results in *Erythea* (Dec.) as follows: pages 283 to 356 were published in 1840; pages 357 to 455, in 1841.

THE LAST INSTALLMENT of Jennan's synoptical list of the ferns of Jamaica (Bull. Bot. Dept. Jamaica 3: 266-270) includes *Aspidium macronatum pinnatifidum*, *A. triangulatum* Sw. in three forms, *A. tridens* Hook., *A. viviparum* Hook., in several forms, *A. aculeatum* Sw. and *A. acul. Moritzianum*.

THE SPOT DISEASE of orchids, which disfigures the leaves, has been studied by George Masee (*Ann. Bot.* 9: 421), and found to be due to small drops of water on the leaves at the time when the plants are chilled. The histological appearances resemble those caused by the so-called *Plasmodiophora* of the grape.

MR. A. A. HELLER has just returned from a nine months collecting tour in the Sandwich Islands. Nearly the entire period was spent on the islands of Kauai and Oahu. His collection contains thirty thou-

¹ See his sketch of the life of Prof. D. C. Eaton in this journal. 20: 366. 1895.

sand specimens and includes about one thousand numbers. At least a score of new species have been secured.

MR. BRUCE FINK has published (Bull. Lab. Nat. Hist. State Univ. Iowa) a list of Iowa lichens, the first attempt, so far as we know, to enumerate the lichen flora of the state. Some interesting generalizations are also made, such as: "Of the 196 forms listed, 92 were found only on wood, 57 only on rocks, 2 on wood and earth, and 3 on rocks and earth."

BOTANISTS will be gratified to learn that a supplement to the *Index Kewensis* is in preparation, covering the decade following 1885. The basis of it has been prepared by M. Th. Durand, who with Mr. Daydon Jackson is pushing it to completion. The *Kew Bulletin* (Nov.) announces that "it is hoped that they will be able to publish during the course of the next year."

THE JOURNAL OF BOTANY proposes to enlarge, provided sufficient financial support can be secured. The size will be increased sixteen pages and the subscription price to 16s. Increase in the number of papers for publication has rendered the enlargement necessary. It is to be hoped that the needed encouragement will be obtained from British botanists, and the GAZETTE sends its best wishes to its trans-Atlantic colleague.

DR. H. MARSHALL WARD, professor of botany in the Indian Engineering College, has been elected professor of botany in the University of Cambridge. Dr. Ward's admirable researches on the coffee-disease of Ceylon, the root tubercles of leguminous plants, the action of light on bacteria, etc., have made his reputation world wide, and American botanists will be glad to know that the botanical department at Cambridge is to have a vigorous head.

THE BARTRAM BOTANIC GARDEN in Philadelphia, possibly the oldest one in this country, and certainly the most famous, has recently been placed in charge of the botanical department of the University of Pennsylvania. It has already been considerably renovated and extended by Professor Macfarlane. The garden became a part of the system of city parks some time since, and all financial responsibility, as well as the general care and protection of the grounds, rests with the park commissioners.

THREE GARDEN scholarships in the Missouri Botanic Garden will be awarded by the Director of the Garden, prior to the first of April next. One of these scholarships is at the disposal of the St. Louis Florists' Club, and applicants for it should address the Secretary of the Club, enclosing references and stating their qualifications. Applications for the other two scholarships, to receive consideration, must be in the hands of the Director not later than the first day of March. Further information may be obtained of the Director, Dr. William Trelease, St. Louis.

THE NEW RANGE of greenhouses in the botanic garden of Smith College has just been completed. It includes an experimental house with workroom attached, and cool temperate, succulent, warm tem-

perate, stove, palm and propagating houses. The experimental house will be equipped with needful appliances for physiological and biological study and investigation, and the other houses will be stocked with plants which are primarily of educational value and interest. The range has been built in the most substantial manner, with all modern improvements. Smith College is thus well provided with the essentials for the furthering of this part of her botanical work.

MR. D. PRAIN'S studies in *Argemone* are continued in the *Journal of Botany* and the December number deals with forms of great interest to American botanists, those which have become familiar to us under the names *A. Mexicana* and *A. platyceras*. That there has been utter confusion in regard to them American botanists have long been willing to testify, and if Mr. Prain has succeeded in disentangling them he has done us good service. He finds two types, *A. intermedia* Sweet and *A. platyceras* Link & Otto, the former with one variety, *stenopetala*, the latter with two, *hispida* and *chilensis*. It is surprising to note the indiscriminate reference that has been made in previous publications.

THE APPEARANCE OF "CHICHI," or nipples on old trees of *Ginkgo lobata*, the maidenhair tree, is described by Kenjiro Fujii (*Tokyo Bot. Mag.*, 9: 440-444) and illustrated by a photogravure plate of a part of an old tree near a Japanese temple. The nipples are woody outgrowths, which drop vertically downwards from the branches, and remind one of the upward growing "knees" of cypress trees. The author likens them to stalactites, which would lead us to liken the "knees" of cypress to stalagmites. Their morphology has been only partially worked out, but they appear to be associated with latent adventitious buds. A further communication on their structure is promised. Nothing is said of their physiological significance, which can not fail to be of much interest.

DR. S. NAWASCHIN has given a detailed account of the structure of the sexual organs in *Betula*, and the process of fertilization. He regards chalazogamy as one of the intermediate stages between the intercellular growth of the pollen-tube in the gymnospermous ovary, and its free growth through the cavity of the ovary in angiosperms. The first adaptation to the penetration of the pollen-tube through the chalaza lies in the formation of lateral ovules. In plants with a single terminal ovule chalazogamy is impossible. The author traces the development of the typical angiospermous ovary through the following stages: (1) An open ovary, as in *Coniferæ*, with central ovule consisting of nothing but nucellus; (2) closing of the mouth of the ovary (unknown); (3) the ovule clothes itself with an integument, as in *Juglans* and *Myrica*, porogamy; (4) central placenta with two naked ovules, *Loranthus*; (5) *Alnus*; (6) *Betula*; (7) *Ulmus*, an intermediate condition between porogamy and chalazogamy; (8) typical angiosperms. In the development of dicotyledons two lines of descent have manifested themselves,—one, the *Acrospermæ*, begins with a simple porogamous mode of impregnation; while the other series, the *Pleurospermæ*, have begun with chalazogamy, becoming afterwards porogamous. The apetalous dicotyledons are probably descended from the *Coniferæ*; the *Casuarinæ* from the *Gnetaceæ*; the monocotyledons from the *Cycadeæ*.